

REMARKS

Claims 1, 5 and 8, 9, 16-22 and 29-35 were examined and reported in the Office Action. Claims 5, 9 and 29-35 are rejected. Claims 1, 5 and 8, 9, 16-22 and 29-35 remain.

Applicant requests reconsideration of the application in view of the following remarks.

I. 35 U.S.C. § 103

A. It is asserted in the Office Action that claims 5, 29, 30, 33 and 34 are rejected in the Office Action under 35 U.S.C. § 103(a), as being unpatentable over U. S. Patent No. 5,869,208 issued to Miyasaka ("Miyasaka "), in view of U.S. Patent No. 5,641,591 issued to Kawakami et al. ("Kawakami "). Applicant notes that claim 37 was previously canceled. Applicant respectfully traverses the aforementioned rejection for the following reasons.

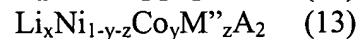
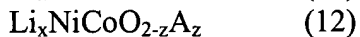
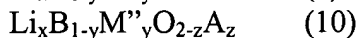
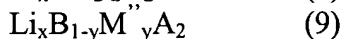
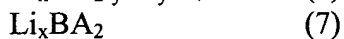
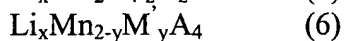
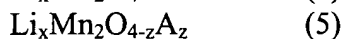
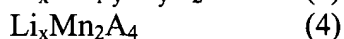
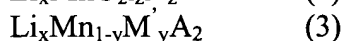
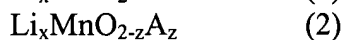
According to MPEP §2142

“[t]o establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure.” (*In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)).

Further, according to MPEP §2143.03, “[t]o establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. (*In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).” “*All words in a claim must be considered* in judging the patentability of that claim against the prior art.” (*In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970), emphasis added.)

Applicant's claim 5 contains the limitations of

[a] method of making a rechargeable lithium battery comprising: forming a positive electrode by physically mixing a positive active material with an additive, the positive active material being selected from the group consisting of lithiated transition metals, and the additive at least one of Si, B, Ga, Ge, Ca, Mg, Sr and Ba; forming a negative electrode including a carbonaceous material as an active material; preparing an electrolyte including an organic solvent including a lithium salt dissolved in the organic solvent; coating the positive active material composition on a current collector; and drying the current collector coated with a positive active material slurry composition, wherein the amount of the additive is 0.01 to 10 wt% of the positive active material, and the lithiated transition metal compound is selected from the group consisting of the formulas 1 to 13:



where $1.0 \leq x \leq 1.1$, $0.01 \leq y \leq 0.1$, $0.01 \leq z \leq 0.5$, M' is at least one transition metal or lanthanide metal selected from the group consisting of Al, Cr, Co, Mg, La, Ce, Sr and V, M'' is at least one transition metal or lanthanide metal selected from the group consisting of Al, Cr, Mn, Fe, Mg, La, Ce, Sr and V, A is selected from O, F, S or P, and B is Ni or Co.

Miyasaka discloses a lithium ion secondary battery. In Applicant's claimed invention, Si is not used as a conductive agent. Therefore, the assertion in the Office Action in which the amount of the additive in Applicant's claimed invention can be expected from those of the conductive agent in Miyasaka is respectfully not accurate.

Kawakami discloses a rechargeable battery using a lithium chemical reaction. Applicant's claimed invention uses elements such as Si, Ge or Mg as an additive, whereas Kawakami uses such elements as an active material. Further, in Applicant's claimed invention, the additive is used in a positive electrode. Distinguishable, in Kawakami the active material is used in a negative electrode. Thus, the effect of using Applicant's claimed additive in the positive electrode, which allows the positive electrode to exhibit good high-temperature cycle life characteristics and thermal stability, cannot be expected from nor be obtained from the negative active material of Kawakami.

Additionally, the elements, Si, GE, and Mg, do not participate in the electrochemical reaction in the positive electrode, whereas in Kawakami, such elements do participate in the electrochemical reaction in the negative electrode because these act as the active material. Thus, it is well known to one of ordinary skill in the art that the negative active material cannot be merely used in the positive electrode.

Therefore, a person having ordinary skill in the art would not be expected to apply the electrically conductive material of Kawakami to the technique of Miyasaka. Further, neither Miyasaka nor Kawakami teach, disclose or suggest

[a] method of making a rechargeable lithium battery comprising: forming a positive electrode by physically mixing a positive active material with an additive, the positive active material being selected from the group consisting of lithiated transition metals, and the additive at least one of Si, B, Ga, Ge, Ca, Mg, Sr and Ba; forming a negative electrode including a carbonaceous material as an active material; preparing an electrolyte including an organic solvent including a lithium salt dissolved in the organic solvent; coating the positive active material composition on a current collector; and drying the current collector coated with a positive active material slurry composition, wherein the amount of the additive is 0.01 to 10 wt% of the positive active material, and the lithiated transition metal compound is selected from the group consisting of the formulas 1 to 13:..

Neither Miyasaka, Kawakami, and therefore, nor the combination of the two, teach, disclose or suggest all the limitations contained in Applicant's claim 5, as listed above. Since

neither Miyasaka, Kawakami, and therefore, nor the combination of the two, teach, disclose or suggest all the limitations of Applicant's claim 5, Applicant's claim 5 is not obvious over Miyasaka in view of Kawakami since a *prima facie* case of obviousness has not been met under MPEP §2142. Additionally, the claims that directly depend from claim 5, namely claims 29, 30 and 33-34, would also not be obvious over Miyasaka in view of Kawakami for the same reason.

Accordingly, withdrawal of the 35 U.S.C. § 103(a) rejections for claims 5, 29, 30, 33 and 34 are respectfully requested.

B. It is asserted in the Office Action that claims 5, 29, 30, 33 and 34 are rejected in the Office Action under 35 U.S.C. § 103(a), as being unpatentable over U. S. Patent No. 5,851,696 issued to Saidi et al. ("Saidi"), in view of U. S. Patent No. 5,641,591 issued to Kawakami et al. ("Kawakami"). Applicant respectfully traverses the aforementioned rejection for the following reasons.

Applicant's claims 29, 30 and 33-34 directly depend on claim 5. Applicant has addressed Kawakami above in section I(A) regarding amended claim 5.

Saidi discloses an electrochemical cell having a nonmetal negative electrode without using any solid metal active material. Similarly regarding Kawakami, Saidi does not teach, suggest or disclose

[a] method of making a rechargeable lithium battery comprising: forming a positive electrode by physically mixing a positive active material with an additive, the positive active material being selected from the group consisting of lithiated transition metals, and the additive at least one of Si, B, Ga, Ge, Ca, Mg, Sr and Ba; forming a negative electrode including a carbonaceous material as an active material; preparing an electrolyte including an organic solvent including a lithium salt dissolved in the organic solvent; coating the positive active material composition on a current collector; and drying the current collector coated with a positive active material slurry composition, wherein the amount of the additive is 0.01 to 10 wt% of the positive active material, and the lithiated transition metal compound is selected from the group consisting of the formulas 1 to 13:..

Therefore, even if Saidi were combined with Kawakami, the resulting method would still not teach, disclose or suggest all the limitations contained in Applicant's claim 5, as listed above. Since neither Saidi, Kawakami, and therefore, nor the combination of the two, teach, disclose or suggest all the limitations of Applicant's claim 5, Applicant's claim 5 is not obvious over Saidi in view of Kawakami since a *prima facie* case of obviousness has not been met under MPEP §2142. Additionally, the claims that directly depend from claim 5, namely claims 29, 30 and 33-34, would also not be obvious over Saidi in view of Kawakami for the same reason.

Accordingly, withdrawal of the 35 U.S.C. § 103(a) rejections for claims 29, 30, 33 and 34 are respectfully requested.

C. It is asserted in the Office Action that claim 35 is rejected in the Office Action under 35 U.S.C. § 103(a), as being unpatentable over Saidi, in view of Kawakami and further in view of U. S. Publication No. 2001/0010807 by Matsubara ("Matsubara"). Applicant respectfully traverses the aforementioned rejection for the following reasons.

Applicant's claim 35 is directly dependent on amended claim 5. Applicant has addressed Saidi and Kawakami regarding claim 5 above in section I(B).

Matsubara discloses a lithium/nickel/cobalt composite positive active material for a secondary battery. Matsubara, however, does not teach, suggest or disclose

[a] method of making a rechargeable lithium battery comprising: forming a positive electrode by physically mixing a positive active material with an additive, the positive active material being selected from the group consisting of lithiated transition metals, and the additive at least one of Si, B, Ga, Ge, Ca, Mg, Sr and Ba; forming a negative electrode including a carbonaceous material as an active material; preparing an electrolyte including an organic solvent including a lithium salt dissolved in the organic solvent; coating the positive active material composition on a current collector; and drying the current collector coated with a positive active material slurry composition, wherein the amount of the additive is 0.01 to 10 wt% of the positive active material, and the lithiated transition metal compound is selected from the group consisting of the formulas 1 to 13:..

Therefore, even if Saidi were combined with Kawakami and Matsubara, the resulting method would still not teach, disclose or suggest all the limitations contained in Applicant's claim 5, as listed above. Since neither Saidi, Kawakami, Matsubara, and therefore, nor the combination of the three, teach, disclose or suggest all the limitations of Applicant's claim 5, Applicant's claim 5 is not obvious over Saidi in view of Kawakami and Matsubara since a *prima facie* case of obviousness has not been met under MPEP §2142. Additionally, the claim that directly depends from claim 5, namely claim 35, would also not be obvious over Saidi in view of Kawakami and Matsubara for the same reason.

Accordingly, withdrawal of the 35 U.S.C. § 103(a) rejection for claim 35 is respectfully requested.

D. It is asserted in the Office Action that claims 5, 9 and 29-32 are rejected in the Office Action under 35 U.S.C. § 103(a), as being unpatentable over U. S. Patent No. 6,589,694 issued to Gosho et al. ("Gosho") and further in view of Kawakami. Applicant respectfully traverses the aforementioned rejection for the following reasons.

Applicant has addressed Kawakami above in section I(A) regarding claim 5.

Gosho discloses a positive electrode active material, a negative electrode active material and an electrolyte used in a non-aqueous secondary battery. Gosho, however, does not teach, suggest or disclose

[a] method of making a rechargeable lithium battery comprising: forming a positive electrode by physically mixing a positive active material with an additive, the positive active material being selected from the group consisting of lithiated transition metals, and the additive at least one of Si, B, Ga, Ge, Ca, Mg, Sr and Ba; forming a negative electrode including a carbonaceous material as an active material; preparing an electrolyte including an organic solvent including a lithium salt dissolved in the organic solvent; coating the positive active material composition on a current collector; and drying the current collector coated with a positive active material slurry composition, wherein the amount of the additive is 0.01 to 10 wt% of the positive active material, and the lithiated transition metal compound is selected from the group consisting of the formulas 1 to 13:..

Therefore, even if Gosho were combined with Kawakami, the resulting method would still not teach, disclose or suggest all the limitations contained in Applicant's claim 5, as listed above. Since neither Gosho, Kawakami, and therefore, nor the combination of the two, teach, disclose or suggest all the limitations of Applicant's claim 5, Applicant's claim 5 is not obvious over Gosho in view of Kawakami since a *prima facie* case of obviousness has not been met under MPEP §2142. Additionally, the claims that directly depend from claim 5, namely claims 9 and 29-32, would also not be obvious over Gosho in view of Kawakami for the same reason.

Accordingly, withdrawal of the 35 U.S.C. § 103(a) rejections for claims 5, 9 and 29-32 are respectfully requested.

CONCLUSION

In view of the foregoing, it is submitted that claims 1, 5 and 8-35 patentably define the subject invention over the cited references of record, and are in condition for allowance and such action is earnestly solicited at the earliest possible date. If the Examiner believes a telephone conference would be useful in moving the case forward, he is encouraged to contact the undersigned at (310) 207-3800.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly, extension of time fees.

Respectfully submitted,

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Dated: August 11, 2006

By: 

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CERTIFICATE OF MAILING

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Jean Svoboda